

# Assignment 2

Show all your work

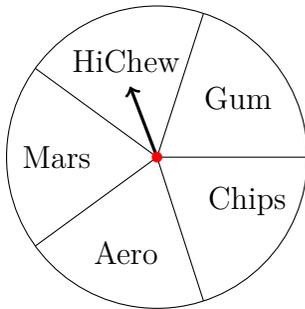
Name: \_\_\_\_\_

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Signature: \_\_\_\_\_

Score: \_\_\_\_/17

**Problem 1:** Dad constructed a spinner with five sectors the morning after Halloween for Hamlet and Samlet. Assume that the pointer never lies on a border line, answer the following questions.



a. Draw a tree diagram for spinning the spinner ONCE. Use abbreviation.

b. Construct a table for the sample space for the experiment of spinning the spinner TWICE.

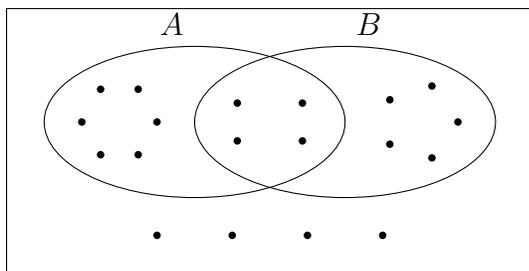
c. Write the event of Gum appearing at least once when Hamlet spun the spinner twice. Express as a set of outcomes.

d. Samlet was still too young to have gum. Find the probability for the event of Gum not appearing at all when Samlet spun the spinner twice. Answer as a fraction.

e. Find the probability for the event of getting either a Mars or an Aero (or both) when Hamlet spun the spinner twice. Answer as a fraction.

Score: \_\_\_\_/8

**Problem 2:** Dad drew a big rectangle representing a sample space containing two events,  $A$  and  $B$ . Assume that the outcomes (as dots) were all equally likely, answer the following questions.



a.  $P(B)$

b.  $P(A \text{ or } \bar{B})$

c.  $P(B | A)$

d. Are  $A$  and  $B$  independent?

Score: /5

**Problem 3:** Hamlet woke up with a high fever and a bad cough. When Sam brought him to the doctor, a rapid antigen test from a throat swab sample was performed. From the table below, draw a probability tree with probabilities assigned on the branches to answer the probability of NOT having a strep throat given a positive test result in two ways, directly from the table and from the tree.

		Streptococcus	
		Have Strep A	No Strep A
Test	+	240	35
Results	-	40	4560

Score: /4